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ABSTRACT

A theoretical framework can provide coherence and direction to an ongoing series of research activities conducted in a variety of settings by collaborative investigators. An adaptation of the PRECEDE health education model provides the theoretical framework for research activities conducted by The Healthy Kids Project, a cooperative effort in North Carolina that investigates cost-effective interventions that increase use of the Early and Periodic Screening, Diagnosis, and Treatment Program (EPSDT). The EPSDT provides comprehensive preventive health services for indigent children from birth to age 21, and the Healthy Kids Project focuses on interventions that nurses can use to increase EPSDT use. In the PRECEDE model, interventions must consider predisposing, reinforcing, and enabling factors that contribute to the behavioral causes of the identified problem. The adapted PRECEDE model has assisted The Healthy Kids Project research activities by: (1) guiding selection of research priorities; (2) helping integrate contributions from diverse collaborators; (3) guiding design and evaluation of research interventions; and (4) helping interpret, synthesize, and disseminate research findings. In addition, the model provides stability to the project focus as participants change over time. A diagram of the adapted PRECEDE model is included. (MM)

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Model-Driven Research: Increasing Use of Health Services for Indigent Children

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Model-Driven Research: Increasing Use of Health Services for Indigent Children

The importance of a theoretical or conceptual framework to a research study is widely recognized (c.f., Kerlinger, 1973; Polit & Hungler, 1991). Conceptual frameworks or theories are abstract generalizations that present a systematic explanation of how phenomena are interrelated. Research studies generally result in the determination of empirical facts, and a conceptual framework is often necessary to integrate isolated facts into a meaningful pattern. Often, each researcher selects or adapts a theoretical framework to meet the needs of an individual investigation. This paper will illustrate how a theoretical framework can provide coherence and direction to an ongoing series of research activities conducted in a variety of settings by collaborative investigators.

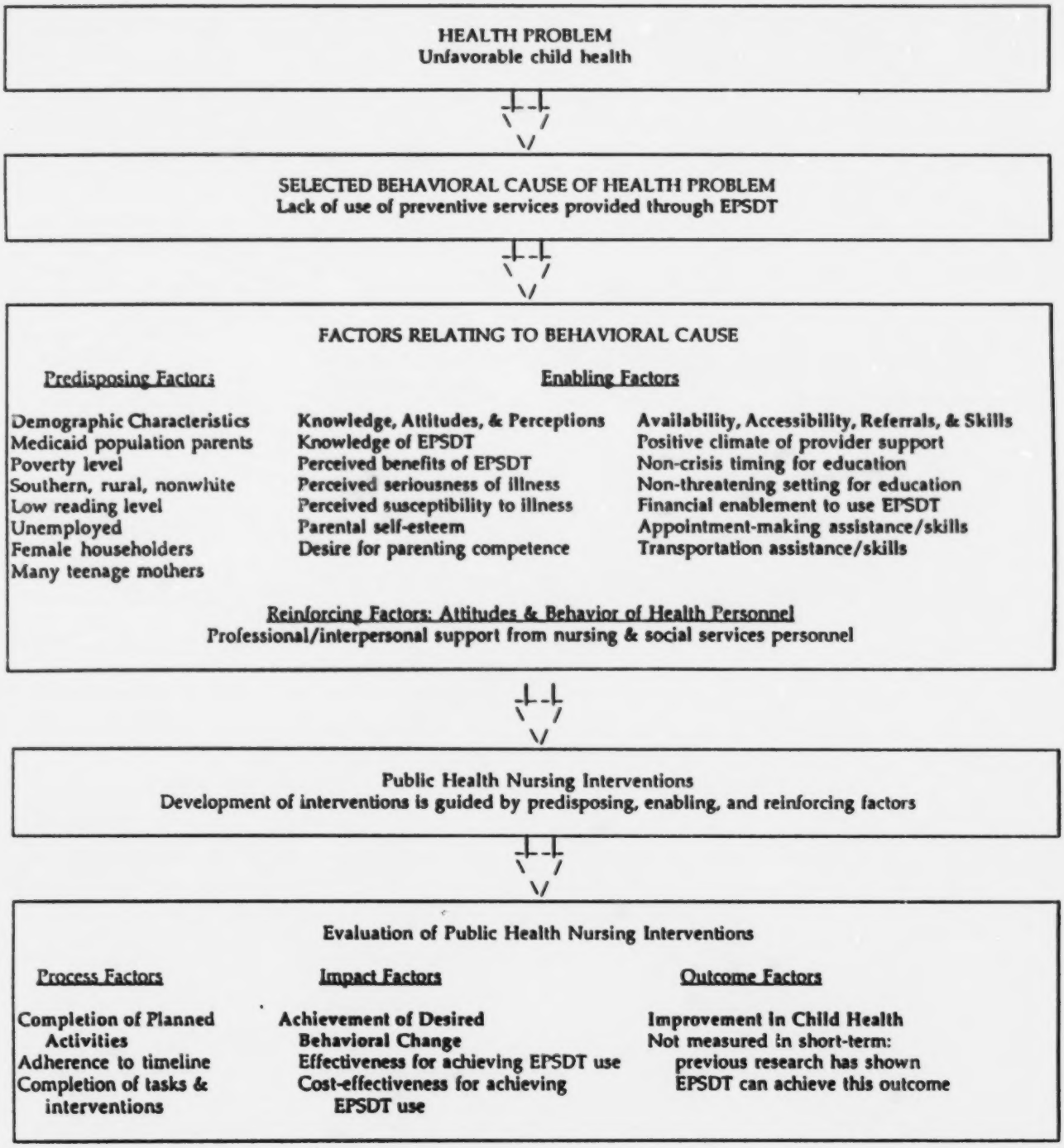
EPSDT, the Early and Periodic Screening, Diagnosis, and Treatment Program, provides comprehensive preventive health services for indigent children from birth to age 21. EPSDT services are beneficial to children and reduce health-care costs because they foster early diagnosis and treatment of disorders (Currier, 1979; Irwin & Conroy-Hughes, 1982; Keller, 1983; Manning, 1985; Reis et al., 1984; Select Committee, 1985). However, EPSDT utilization rates are low: nationally, fewer than a third of eligible children receive EPSDT services (Children's Defense Fund (CDF), 1990; HCFA, 1991). In rural counties in North Carolina, utilization rates are as low as 10% (NC DMA, 1991).

The Healthy Kids Project is a cooperative effort of the School of Nursing at the University of North Carolina at Greensboro, the School of Public Health of the University of North Carolina at Chapel Hill, the North Carolina Division of Medical Assistance, the North Carolina Center for Health and Environmental Statistics, and the departments of health and social services in several rural counties in North Carolina. For the past three years, the Healthy Kids Project has conducted a series of studies to investigate cost-effective interventions to increase EPSDT use. To date, the Healthy Kids Project has conducted or is planning to conduct over a dozen separate research studies toward this end. Because many private physicians choose not to provide EPSDT services, public health nurses bear a large burden for providing EPSDT services. For this reason the Project focuses on interventions that nurses can employ to increase EPSDT use.

An adaptation of the PRECEDE health education model (Selby, Riportella-Muller, Sorenson, & Walters, 1989) is the foundation for all Project research activities. This model is presented in Figure 1. The model indicates that "interventions must consider predisposing, reinforcing, and enabling factors that contribute to the behavioral causes of the identified problem. In the Healthy Kids Project, the identified problem is the unfavorable health status of NC's rural poor children. The behavioral cause being addressed is families' lack of use of the EPSDT program" (Selby, et. al., 1992b).

Figure 1:

Adapted PRECEDE Model for Improving EPSDT Utilization


HEALTH PROBLEM
Unfavorable child health
SELECTED BEHAVIORAL CAUSE OF HEALTH PROBLEM
Lack of use of preventive services provided through EPSDT
FACTORS RELATING TO BEHAVIORAL CAUSE
Predisposing Factors
Demographic Characteristics
Medicaid population parents
Poverty level
Southern, rural, nonwhite
Low reading level
Unemployed
Female householders
Many teenage mothers
Enabling Factors
Knowledge, Attitudes, & Perceptions
Knowledge of EPSDT
Perceived benefits of EPSDT
Perceived seriousness of illness
Perceived susceptibility to illness
Parental self-esteem
Desire for parenting competence
Availability, Accessibility, Referrals, & Skills
Positive climate of provider support
Non-crisis timing for education
Non-threatening setting for education
Financial enablement to use EPSDT
Appointment-making assistance/skills
Transportation assistance/skills
Reinforcing Factors: Attitudes & Behavior of Health Personnel
Professional/interpersonal support from nursing & social services personnel
Public Health Nursing Interventions
Development of interventions is guided by predisposing, enabling, and reinforcing factors
Evaluation of Public Health Nursing Interventions
Process Factors
Completion of Planned Activities
Adherence to timeline
Completion of tasks & interventions
Impact Factors
Achievement of Desired Behavioral Change
Effectiveness for achieving EPSDT use
Cost-effectiveness for achieving EPSDT use
Outcome Factors
Improvement in Child Health
Not measured in short-term:
previous research has shown
EPSDT can achieve this outcome

Project research activities have proceeded in phases. The PRECEDE model guides selection of Project research priorities, helps to integrate contributions from the diverse collaborators in the Project, guides the design and evaluation of the research interventions, and helps in interpretation, synthesis, and dissemination of the research findings. The role of the PRECEDE model in four of the current studies in the Project is discussed below:

Phase I of the project was a study to evaluate the effectiveness and cost-effectiveness of a mailed packet in recruitment of EPSDT providers. This study articulated with the PRECEDE model by addressing the *enabling* factor of availability of EPSDT services. In a quasi-experimental design, a recruitment packet was mailed to all 73 primary care physicians in 6 rural counties. The packet included a personal letter and a pamphlet describing EPSDT. Impact on the number willing to provide EPSDT screens was evaluated, and the cost per recruited provider was determined. The number of providers increased from 15 (21%) to 25 (34%) at a cost of less than $30 per recruited provider (Selby et al., 1992a).

Phase II, currently nearing completion, is a randomized trial to evaluate the effectiveness and cost effectiveness of 3 interventions directed at a random sample of 2,514 parents with a history of not using EPSDT for their children. The interventions were:

1) mailed pamphlet accompanied by personalized letter,
2) telephone call by a nurse, and
3) home visit by a nurse.

All 3 interventions were compared to the control procedure in which parents are informed about EPSDT in the usual manner at the Medicaid eligibility interview.

The interventions articulate with the PRECEDE model through addressing identical *predisposing* factors (i.e., demographic characteristics, knowledge, attitudes, and perceptions of EPSDT), but addressing differing levels of *enabling* and *reinforcing* factors, with concomitant increases in costs. Preliminary findings suggest that all 3 interventions are superior to the control procedure in producing EPSDT use by the sample; the cost per increase in use varied substantially across interventions (Selby et al., 1992b).

Phase III, also underway, consists of semi-structured interviews with a random sample of 125 parents who, despite intervention, continue not to use EPSDT. The purpose of the interviews is to determine reasons why, despite intervention, parents do not use EPSDT services for their children. This study articulated with the PRECEDE model through identifying additional factors (i.e., *enabling*, *reinforcing*, and *predisposing* factors) which should be addressed by future interventions. Preliminary data analyses suggest that reasons these parents did not use EPSDT include the low priority assigned to preventive health care in the context of poverty-level lifestyles; and inconvenience of services. A need for more evening clinics was suggested (Selby et al., 1992b).

Project studies currently being initiated include a pilot study to evaluate the feasibility and logistics of using Interactive

Videodisc (IVD) technology to educate parents about EPSDT services. This intervention addresses the same *predisposing* factors as the interventions investigated in Phase II, with special emphasis on the factor of literacy level. It also addresses the *enabling* factor of non-threatening setting for education. The understandability and acceptability of IVD education will be assessed through semi-structured interviews with 10 parents who have interacted with a prototype IVD program on EPSDT services. After refinement, a randomized trial using approximately 30 parents will be conducted in one county. Half the subjects will be randomly assigned to receive education about EPSDT through IVD education; subjects in the control group will receive EPSDT education in the usual manner at the Medicaid eligibility interview. Knowledge of EPSDT services after education will be determined for the two groups. Logistical problems and considerations in conducting a randomized study comparing IVD and conventional education will be documented. If the pilot study suggests IVD education is feasible, a subsequent large-scale randomized trial will be conducted.

There is currently increasing national emphasis on preventive health care, and on EPSDT in particular. Final Project activities should have important implications for health policy, practice, and future research. Already, collaboration between Project researchers and service agency officials has resulted in policy changes to facilitate EPSDT participation in North Carolina, and the agencies are collaborating in additional research related to EPSDT program utilization and effectiveness. Inquiries have also been received from other states regarding adoption of components of the Project. The adapted PRECEDE model continues to serve an important role in the interpretation and integration of findings, in planning future research, and in disseminating research findings. The model has also provided stability to Project focus as Project participatns have changed over time.

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